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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/586,869

07/21/2006

Friedrich Boecking

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04/24/2008

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1423 POWHATAN STREET, UNIT ONE

ALEXANDRIA, VA 22314

EXAMINER

KIM, CHRISTOPHER S

ART UNIT

PAPER NUMBER

3752

MAIL DATE

DELIVERY MODE

04/24/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/586,869	Applicant(s) BOECKING, FRIEDRICH	
	Examiner Christopher S. Kim	Art Unit 3752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/21/06; 3/6/08</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 11-24 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 11 recites the limitation "the pressure" in line 7. There is insufficient antecedent basis for this limitation in the claim.

Claim 12 recites "...which chamber is acted upon via a high-pressure inlet by fuel at system pressure." It appears that "system pressure" is directed to a pressure outside the injector. The preamble is directed to a fuel injector (subcombination) and the body of the claim includes limitations to a fuel injector and fuel at system pressure (combination).

The term "high" in claim 12 is a relative term which renders the claim indefinite. The term "high" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is uncertain what pressure is being defined by the claim.

Claim 17 recites the limitation "the pressure chamber" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 18 recites the limitation "the pressure chamber" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 19 recites the limitation "the pressure chamber" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 20 recites the limitation "the pressure chamber" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 22 recites the limitation "the pressure chamber" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 23 recites the limitation "the guidance" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 24 recites the limitation "the hydraulic chamber" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 24 recites the limitation "the pressure chamber" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 24 recites the limitation "the spring element" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 3752

4. Claim 11, 13, 20, 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Stoecklein et al. (6,651,950).

Stoecklein discloses a fuel injector comprising:

- an injector body (part of body 5 having bore 8);
- a nozzle holder (part of body 5 having stop 15);
- an injection valve member 9;
- a seat 19;
- injection openings (injectors);
- piezoelectric actuator 3;
- a first booster piston 7;
- a second booster piston 10;
- a control chamber 22;
- a control chamber sleeve 8;
- an annular face (face of 7A) of the first booster piston 7;
- an annular face (face of piston 10) of the second booster piston 10;
- a plane face 15 of the nozzle holder;
- a hydraulic chamber 11;
- a compensation bore 24, 33.

5. Claim 11, 12, 20, 21, 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Auwaerter et al. (5,697,554).

Auwaerter discloses a fuel injector comprising:

- an injector body 12, 13;

a nozzle holder 11;
an injection valve member 21;
a seat 18;
injection openings 20;
piezoelectric actuator 25;
a first booster piston 30';
a second booster piston 331';
a control chamber 41;
a pressure chamber 14;
a high pressure inlet 27;
a control chamber sleeve 28;
a hydraulic chamber (within 30');
a compensation bore 46;
a spring element 22'.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher S. Kim whose telephone number is (571) 272-4905. The examiner can normally be reached on Monday - Friday, 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Shaver can be reached on (571) 272-4720. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Christopher S. Kim/
Primary Examiner, Art Unit 3752

CK